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EXAMINER	
ZERVIGON, RUDY	
ART UNIT	**PAPER NUMBER**
1763	

DATE MAILED: 08/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/837,459	IZAWA ET AL.	
	Examiner	Art Unit	
	Rudy Zervigon	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *27-49* is/are pending in the application.

4a) Of the above claim(s) *32-35 and 40-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *27-31 and 36-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Election/Restriction

1. Newly submitted claims 32-35, and 40-46 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The apparatus claims are distinct from the process claims 35-35, and 40-46 because: The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed can be used to practice another and materially different process, for example, and an etching apparatus.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 32-35 and 40-46 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 31 recites the limitation "insides of the chambers". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 27-29, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki, Hideaki et al (US 20030037730 Al). Yamasaki teaches a deposited-film formation apparatus (Figure 1; [0016]) comprising: an inside-evacuatable chamber (10; Figure 1; [0046]); a gas feed piping (12; Figure 1; [0046]) for feeding a material gas into the chamber (10; Figure 1; [0046]); an evacuation means (26; Figure 1; [0051]) for evacuating the inside of the chamber (10; Figure 1; [0046]) -

Support for this portion of claim 27 is found in section [0058] of Applicant's originally filed specification. Specifically, the specification teaches "106, a vacuum pump". Yamasaki teaches a vacuum pump 26, Figure 1. As such, Yamasaki teaches an equivalent apparatus that performs the function of chamber vacuum generation. As a result, Yamasaki's prior art element of 26 for chamber vacuum generation perform the identical function of chamber vacuum generation in substantially the same way, and produces substantially the same results as the corresponding elements disclosed in the specification (MPEP 2183).

Yamasaki further teches a first evacuation piping (36 + 28; Figure 1) which connects the chamber (10; Figure 1; [0046]) and the evacuation means (26; Figure 1; [0051]); and a second evacuation piping (34; Figure 1) for guiding evacuation through the evacuation means (26; Figure 1; [0051]), wherein the deposited-film formation apparatus (Figure 1; [0016]) has a temperature sensor (64; Figure 4; [0084] - 28; Figure 1) which detects the heat of reaction that is generated when the material gas fed into the chamber (10; Figure 1; [0046]) reacts with oxygen contained in air having entered from the outside of the deposited-film formation apparatus (Figure 1; [0016]) and the first evacuation piping (36 + 28; Figure 1) or the second evacuation piping (34; Figure 1) gas has a piping connection part (90° elbow; Figure 1).

Applicant's additional claim limitation of a "has a temperature sensor which detects the heat of reaction that is generated when the material gas fed into the chamber reacts with oxygen contained in air having entered from the outside of the deposited-film formation apparatus" is a requirement of intended use. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02). That Yamasaki's temperature sensor (64; Figure 4; [0084] - "thermocouple") measures heat (by definition), a heat "of reaction" is indistinguishable from other heats especially when the claim 27 "heat of reaction" is between an unknown reactant of "the material gas" and oxygen. Further, that Yamasaki's temperature sensor (64; Figure 4; [0084] - "thermocouple") is capable of measuring a "heat" of reaction is provided by Yamasaki:

"

[0084] A thermocouple 64, i.e., a temperature sensor, is detachably attached to the trap body 56. The thermocouple 64 has an output terminal connected to a heater power controller by a wire 66. Power is supplied from the heater power supply circuit to the built-in heating coil 54 embedded in the heater body 52 to generate heat by the heater coil 54. Heat generated by the heater coil 54 is transferred through the heater body 52 to the trap body 56 to heat the trap body 56 and the

trapping plates 60. The heater power controller controls power supply to the heating coil 54 so that the temperatures of the trap body 56 or the trapping plates 60 coincide with a predetermined reaction temperature or a predetermined trapping temperature.

"

Yamasaki further teaches:

i. The deposited film formation apparatus (Figure 1; [0016]) according to claim 27, wherein the temperature sensor (64; Figure 4; [0084] - 28; Figure 1) is provided on an outer wall surface of the chamber (10; Figure 1; [0046]) or at the first (36 + 28; Figure 1) or second evacuation piping (34; Figure 1), as claimed by claim 28. The Examiner believes that the first two alternatives are met: Applicant's temperature sensor (101; Figure 1) is universally shown as always being "on an outer wall surface of the chamber (105)". As such, Yamasaki's temperature sensor (64; Figure 4; [0084] - 28; Figure 1) is also constantly shown provided on an outer wall surface of the chamber (10; Figure 1; [0046])

ii. A vacuum system comprising: a chamber (10; Figure 1; [0046]); a gas feed means for feeding a gas into the chamber (10; Figure 1; [0046]); and an evacuation means (26; Figure 1; [0051]) and an evacuation piping by and through which the inside of the chamber (10; Figure 1; [0046]) is evacuated – claim 39.

Yamasaki does not teach his temperature sensor (64; Figure 4; [0084] - 28; Figure 1) measures temperatures between about 0°C and 150°C as claimed by claims 27 and 39, and Yamasaki does not teach that the temperature sensor (64; Figure 4; [0084] - 28; Figure 1) is provided 5 cm to 20 cm on the side downstream to the piping connection part (90° elbow; Figure 1), as claimed by 27

and 39.

Yamasaki further does not teach Yamasaki's deposited-film formation apparatus (Figure 1; [0016]) according to claim 27, wherein Yamasaki's temperature sensor (64; Figure 4; [0084] - 28; Figure 1) is provided on the side downstream to the evacuation means (26; Figure 1; [0051]), as claimed by claim 29

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Yamasaki to use plural temperature sensors (64; Figure 4; [0084] - 28; Figure 1) or to optimize the location of Yamasaki's temperature sensor (64; Figure 4; [0084] - 28; Figure 1).

Motivation for Yamasaki to use plural temperature sensors, or to optimize the location of Yamasaki's temperature sensor is for adding plural heating control ([0084]) in both of Yamasaki's trapping devices (28,30; Figure 1). Further, it is well established that the duplication of parts is obvious (In re Harza , 274 F.2d 669, 124 USPQ 378 (CCPA 1960) MPEP 2144.04).

6. Claims 30, and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki, Hideaki et al (US 20030037730 Al) in view of Carlsen, Kurt A. et al. (US 6,155,289 A). Yamasaki is discussed above. Yamasaki further teaches Yamasaki's deposited-film formation apparatus (Figure 1; [0016]) according to claim 37, wherein Yamasaki's temperature sensors (64; Figure 4; [0084] - 28; Figure 1) are provided along the flow of gas (Figure 1) – claim 38.

Yamasaki does not teach:

i. Yamasaki's deposited-film formation apparatus (Figure 1; [0016]) according to claim 27, which has a leak judgment means which judges the occurrence of a leak on the basis of a measured value of Yamasaki's temperature sensor (64; Figure 4; [0084] - 28; Figure 1),

and a feed-gas feed control means which stops the feeding of material gases upon detection of a leak by the leak judgment means, as claimed by claim 30

ii. A deposited-film formation apparatus (Figure 1; [0016]) comprising: a chamber (10; Figure 1; [0046]) a gas feed piping (12; Figure 1; [0046]) for feeding a reactive material gas into Yamasaki's chamber (10; Figure 1; [0046]); and an evacuation means (26; Figure 1; [0051]) and an evacuation piping by and through which the inside of Yamasaki's chamber (10; Figure 1; [0046]) is evacuated, wherein Yamasaki's deposited-film formation apparatus (Figure 1; [0016]) has at least one temperature sensor (64; Figure 4; [0084] - 28; Figure 1) and a leak judgment means which judges the occurrence of a leak on the basis of a measured value of Yamasaki's temperature sensor (64; Figure 4; [0084] - 28; Figure 1) and the evacuation piping has a piping connection part (90° elbow; Figure 1) and Yamasaki's at least one temperature sensor (64; Figure 4; [0084] - 28; Figure 1) is provided 5 cm to 20 cm on the side downstream to the piping connection part (90° elbow; Figure 1) – claim 36

iii. Yamasaki's deposited-film formation apparatus (Figure 1; [0016]) according to claim 36, wherein Yamasaki's temperature sensor (64; Figure 4; [0084] - 28; Figure 1) is provided in plurality, and the leak judgment means judges the leak to have occurred when the measured values of Yamasaki's temperature sensor (64; Figure 4; [0084] - 28; Figure 1) provided in plurality increase, as claimed by claim 37

iv. the leak judgment means judges the leak to have occurred when the measured values of the temperature sensors increase along the flow of gas – claim 38

Carlsen teaches a leak detection system (Figure 1; column 4, lines 23-51) including:

i. Carlsen's deposited-film formation apparatus (Figure 1; column 1, lines 10-28), which has a leak judgment means (50, 54, 60; Figure 1; column 4, lines 23-51) which judges the occurrence of a leak on the basis of a measured value of Carlsen's temperature sensor (60; Figure 1; column 4, lines 23-51), and a feed-gas feed control means (40; Figure 1; column 4, lines 23-51) which stops the feeding of material gases upon detection of a leak by the leak judgment means, as claimed by claim 30. Support for "leak judgment means" is found in section [0025]. Specifically, the specification teaches: "The present invention still further provides a leak judgment method comprising the steps of feeding a reactive gas to the inside of a vacuum system having a chamber and an evacuation piping, measuring temperature of the vacuum system at a plurality of spots thereof, and judging the occurrence of a leak on the basis of a change with time of a plurality of measured values obtained by measuring the temperature." Carlsen teaches a leak judgment method comprising the steps of feeding a reactive gas (14; Figure 1) to the inside of a vacuum system having a chamber (50) and an evacuation piping (54), measuring temperature (60; Figure 1; column 4, lines 23-51) of the vacuum system at a plurality of spots thereof, and judging the occurrence of a leak on the basis of a change with time of a plurality of measured values obtained by measuring the temperature - column 4, lines 23-51. As such, Carlsen teaches an equivalent apparatus that performs the function of leak detection. As a result, Carlsen's prior art elements of 50, 54, and 60 for leak detection perform the identical function of leak detection in substantially the same way, and produces substantially the same results as the corresponding elements disclosed in the specification (MPEP 2183). Support for "feed-gas feed control means" is found in section [0073].

Specifically, the specification teaches: "It may also have a feed-gas feed control means which stops the feeding of material gases upon detection of a leak by the leak judgment means.". Carlsen teaches a feed-gas feed control means (40; Figure 1; column 4, lines 23-51) which stops the feeding of material gases upon detection of a leak by Carlsen's leak judgment means (50, 54, 60; Figure 1; column 4, lines 23-51). As such, Carlsen teaches an equivalent apparatus that performs the function of feed-gas feed control means. As a result, Carlsen's prior art element of 40 for feed-gas feed control means perform the identical function of feed-gas feed control means detection in substantially the same way, and produces substantially the same results as the corresponding elements disclosed in the specification (MPEP 2183).

ii. Carlsen's deposited-film formation apparatus (Figure 1; column 1, lines 10-28) according to claim 36, wherein Carlsen's leak judgment means (40; Figure 1; column 4; lines 23-51) judges the leak to have occurred when the measured values of Carlsen's temperature sensor (60; Figure 1; column 4, lines 23-51) changes

It would have been obvious to one of ordinary skill in that art at the time the invention was made to add Carlsen's leak judgment means to Yamasaki's down-stream piping (38; Figure 1) including adding plural temperature sensors.

Motivation to add Carlsen's leak judgment means to Yamasaki's down-stream piping including adding plural temperature sensors is to prevent system gas line leaks as taught by Carlsen (column 4, lines 28-51). Further, it is well established that the duplication of parts is obvious (In re Harza , 274 F.2d 669, 124 USPQ 378 (CCPA 1960) MPEP 2144.04).

7. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki, Hideaki et al (US 20030037730 Al) in view of Saitoh, Keishi et al. (US 5,417,770 A). Yamasaki is discussed above. Yamasaki does not teach the deposited-film formation apparatus (Figure 1; column 1, lines 10-28) according to claim 1, which has the chamber (10; Figure 1; [0046]) in plurality and a means for moving a belt like member continuously through the insides of the chambers in their lengthwise direction.

Saitoh teaches plural chambers (2002, 2031, ...; Figure 20) including means for moving a belt like member (2004-2007; Figure 20).

It would have been obvious to one of ordinary skill in that art at the time the invention was made to reproduce Yamasaki's deposited-film formation apparatus (Figure 1; column 1, lines 10-28) and add Saitoh's means for moving a belt like member.

Motivation to reproduce Yamasaki's deposited-film formation apparatus and add Saitoh's means for moving a belt like member is to produce photovoltaic devices by CVD as taught by Saitoh (column 1, lines 20-25).

Conclusion

8. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272.1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (703) 872-9306. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.